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Department of Energy
Ohio Field Office
Fernald Environmental Management Project
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SEP 05 2002

Mr. Gene Jablonowski, Remedial Project Manager
United States Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0698-02

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Jablonowski and Mr. Schneider:

**DRAFT FINAL REVISED REMEDIAL DESIGN PACKAGE FOR THE SILOS 1 AND 2
ACCELERATED WASTE RETRIEVAL PROJECT AND RESPONSE TO COMMENTS**

- References:
1. Letter, T. Schneider to J. Reising, "Comments - Draft of Revised Remedial Design Package for the Silos 1 and 2 Accelerated Waste Retrieval Project," dated July 19, 2002
 2. Letter, G. Jablonowski to J. Reising, "Disapproval of Draft of Revised Remedial Design Package for the Silos 1 and 2 Accelerated Waste Retrieval Project," dated July 26, 2002
 3. Letter, J. Reising to G. Jablonowski and T. Schneider, "Request for Extension of Date for Response to Comments on the Draft of Revised Remedial Design Package for the Silos 1 and 2 Accelerated Waste Retrieval Project," dated August 26, 2002

A Response to Comments document, providing responses to the referenced comments, from the Ohio Environmental Protection Agency (OEPA) (Reference 1) and the United States Environmental Protection Agency (USEPA) (Reference 2) is enclosed for your review. A draft Final Revised Remedial Design (RD) Package for the Silos 1 and 2 Accelerated Waste Retrieval (AWR) Project, incorporating the necessary revisions to address the referenced comments, is also enclosed.

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SEP 05 2002

Mr. Gene Jablonowski
Mr. Tom Schneider

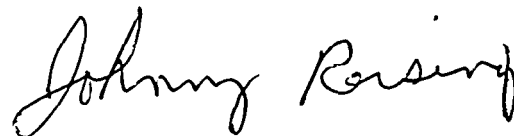
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DOE-0698-02

These documents incorporate the input from review of proposed comment responses with the USEPA on August 21, 2002 and with OEPA on August 26, 2002. In accordance with Reference 3, the enclosed Response to Comments document and draft Final Revised RD Package are due to be submitted to the USEPA and OEPA by September 6, 2002.

If there are any questions or concerns, please contact Nina Akgündüz at (513) 648-3110.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Hall

Enclosure: As Stated

cc w/enclosure:

S. Robison, EM-31/CLOV
N. Akgündüz, OH/FEMP
G. Brown, OH/FEMP
J. Hall, OH/FEMP
J. Saric, USEPA-V, SRF-5J
T. Schneider, OEPA-Dayton (three copies of enclosure)
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R. Greenberg, EM-31/CLOV
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S. Beckman, Fluor Fernald, Inc./MS52-4
D. Carr, Fluor Fernald, Inc./MS2
R. Corradi, Fluor Fernald, Inc./MS52-4
T. Hagen, Fluor Fernald, Inc./MS9
S. Hinnefeld, Fluor Fernald, Inc./MS52-2
D. Nixon, Fluor Fernald, Inc./MS65-2
T. Walsh, Fluor Fernald, Inc./MS52-3
ECDC, Fluor Fernald, Inc./MS52-7

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**SILOS 1 AND 2 ACCELERATED WASTE RETRIEVAL PROJECT
REMEDIAL DESIGN PACKAGE, REVISION 2**

Ohio EPA Comments

General Comments:

1. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: na Pg #: na Line #: na Code: C

Original Comment #:

Comment: Throughout the document the TTA facility is frequently referred to as "interim storage". In order to avoid confusion with the standards for interim storage defined in DOE Order 5400.5, Ohio EPA recommends changing the description to "staging before treatment" or some other appropriate phrase. Otherwise, if the TTA is being defined as interim storage, then the requirements of DOE Order 5400.5 should apply.

Response: Where appropriate, the term "interim storage" will be revised to "staging before treatment," as recommended.

Action: Revise text as appropriate

2. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: na Pg #: na Line #: na Code: C

Original Comment #:

Comment: Provide a list of previously submitted DCNs that are related to this design as an appendix. The list should include a brief description of the DCN and the approval status.

Response: All of the changes to the design documented in the previous RD Package documented in DCNs submitted to OEPA for review are reflected in the current design.

Action: A table summarizing the DCN's submitted to the OEPA and U.S. EPA documenting changes to the design documented in the previous RD Package has been added to the Introduction section of the RD Package.

3. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: na Pg #: na Line #: na Code: C

Original Comment #:

Comment: The narrative portion of the design is very general and lacking in detail.

Response: As stated in the Introduction section, the purpose of the document is to provide the OEPA and U.S. EPA with sufficient understanding of the design to facilitate review of the implementation and environmental controls associated with the project. The intent was to provide a level of detail in the narrative portions of the document, consistent with previous RD submittals, to accompany the drawings and calculations and provide the EPA with sufficient information for review..

Action: As discussed in the responses to other OEPA and USEPA comments, additional details have been added to the narrative portions of the design. Additional Process Flow Diagram (PFD) drawings have also been added. Any other specific details or information required in addition to the information included in the draft RD Package will be provided to the OEPA and U.S. EPA as requested.

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4. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: na Pg #: na Line #: na Code: C

Original Comment #:

Comment: Near the end of the removal operation there will be very little supernatant available for sluicing. If the remediation facility is not operating before the conclusion of the AWR phase, will there be enough water to begin sluicing from the TTA to the remediation facility.

Response: The design of the Silos 1 and 2 Remediation Facility includes three, 83,800-gallon Slurry Receipt Tanks. Installation of these tanks is included in the initial phase of Silos 1 and 2 Remediation facility construction so that the tanks are available to provide capacity to support AWR sluicing operations. Prior to the start of operation of the Silos 1 and 2 Remediation Facility, the slurry receipt tanks can provide 'contingency' capacity in the event that additional capacity is required for storage of wastewater or slurry during AWR operations.

Water stored in these tanks will be utilized to begin sluicing Silos 1 and 2 material from the TTA to the Remediation Facility. Once slurry transfer is initiated, water will be recycled from the slurry receipt tanks and clarifier to continue the sluicing operation.

Action: Additional detail on the availability of the Silos 1 and 2 Remediation Facility Slurry Receipt Tanks has been added to Section 1.5 of the Introduction.

5. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: General Pg #: na Line #: na Code: C

Original Comment #:

Comment: Read comments and responses to comments from previous RD submittals and incorporate into the next revision. It is incredibly frustrating and a waste of time for us to continue to make the same comments in each revision. It also demonstrates a lack of attention to detail by the authors of these revisions.

Response: Responses to OEPA and U.S. EPA comments on the previous drafts of the AWR RD Package and Site Preparation package have been reviewed for applicability to the current design. As identified in OEPA comments 28, 30, and 31 on the current draft, several previous comments related to erosion control measures have not been adequately incorporated. As noted in the corresponding comment responses the necessary changes to incorporate these previous comments have now been made.

Action: Incorporate revisions identified in responses to OEPA Comments 28, 30, and 31.

Section 2.1 - Process Description:

6. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.2 Pg #: 2-1 Line #: na Code: C

Original Comment #:

Comment: Will the RCS be in operation prior to the removal of the plywood and steel framing silo caps? Removal of the plywood and steel framing silo caps prior to RCS operation will increase radon emissions.

Response: Yes. Phase 1 operation of the RCS will be established prior to removal of the plywood caps.

Action: N/A

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7. Commenting Organization: Ohio EPA Commentor: DSW

Section #: 2.3 Pg #: 2-2 Line #: na Code: C

Original Comment #:

Comment: Is there any history of sluicing around large objects? Do we know that this method works when there may be many very large discreet objects present?

Response: Based upon process knowledge and video records of the silo interiors, debris of sufficient size to impede bulk waste retrieval using past practice sluicing methods is not expected to be encountered.

Discrete objects of the size expected to be encountered will be moved away from the slurry pump inlet using the sluice nozzle and/or spray rings with concentrated water flow. Segregation of debris from the slurry stream in this manner during bulk waste retrieval has been successfully utilized during several tank waste retrieval activities in the DOE complex.

Action: N/A

8. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: 2.3.1 Pg #: 2-2 Line #: na Code: C

Original Comment #:

Comment: This section describes what documents will address heel removal. What documents will address the removal of discrete objects? A brief conceptual description of this operation is warranted. The lack of a design for heel and debris removal may impede the ability for the site to reach the 2006 milestone.

Response: The specific design of the discrete object and heel removal activities will be developed based upon the experience and information gained during bulk waste retrieval on the actual amount and nature of heel material and discrete objects. The heel will be removed following the completion of Bulk waste retrieval, prior to D&D of the Silo structures. Removal of discrete objects will be addressed in the safe shutdown / D&D documentation submitted for review prior to initiation of these activities. Appropriate milestones for heel removal and safe shutdown/D&D of the Silo structures will be addressed in the Remedial Action (RA) Workplan for Waste Retrieval Operations, due to be submitted to the USEPA and OEPA for review by August 1, 2003.

Action: The referenced text has been revised to include the above details.

9. Commenting Organization: Ohio EPA Commentor: OFFO

Section #: 2.7 Pg #: 2-4 Line #: na Code: C

Original Comment #:

Comment: A previously submitted DCN eliminated the heating of the carbon beds as a means to regenerate them. This DCN was disapproved by OEPA pending further information to justify the elimination of the heating of the charcoal. This change to the RCS is not reflected in this design.

Response: As was described in DCN 40710-JEG-021A submitted for OEPA and USEPA review, the decision to eliminate the heaters resulted from reevaluation of both the original assumptions regarding the risk of ignition of the carbon, and the need to use heated air in order to provide adequate drying. Reevaluation by an independent fire hazard analysis expert predicted an auto-ignition temperature for the carbon, under the conditions expected in the RCS, significantly lower than what was previously assumed (and lower than the drying temperature specified in the design). The current design utilizes unheated, dried air from the desiccant dryer system rather than heated air to provide necessary drying.

Since the RCS design includes redundant desiccant dryers, as well as demisters upstream of the beds to dry all air entering the carbon beds; buildup of excessive moisture, and the need to dry a bed is not expected to occur frequently. Radon monitors and moisture monitors will be used to

monitor the condition and effectiveness of each bed. Based on the data from these monitors, the need to regenerate a bed will be identified and initiated. Regeneration will be accomplished by isolating the bed requiring drying and recycling dried air from the desiccant drying system through the bed until it has been sufficiently dried. The RCS provides sufficient excess carbon adsorption capacity to maintain specified emission limits while the impacted carbon bed is being dried.

Action: A description of the basis for removal of the carbon bed duct heaters has been added to Section 2.8. Additional detail concerning the means of providing adequate capability has been added to Section 3.6.4.

10. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.0 Pg #: 3-1 Line #: na Code: C
Original Comment #:

Comment: The text states that the project will utilize two 300 gpm sluicing nozzles and one 350 gpm slurry pump on each silo. This means that the amount of water being introduced into the silos will be almost double of what is being removed. It is Ohio EPA's concern that too much water will be added to the silos without immediately being removed and may pose a problem with liquid leaking from the sides of the silo or filling the decant sump tank quickly.

Response: The Silo Waste Retrieval System (SWRS) design does incorporate two 300 GPM sluicing nozzles to provide maximum ability to direct the sluice water as required to most effectively mobilize the Silos material. The two nozzles will be operated; however, with a maximum total discharge flow of 300 gpm, thus ensuring at least 50gpm net 'removal' capacity.

Action: The referenced text has been revised to clarify the maximum total sluice water flow.

11. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1 Pg #: 3-4 Line #: na Code: C
Original Comment #:

Comment: The design does not address debris removal. If the debris is large enough to impede sluicing operations it will have to be removed prior to safe shut down. Debris removal that impedes sluicing operations must be incorporated in the design. How will debris that cause an obstruction be removed?

Response: See responses to OEPA comments 7 and 8.

Action: See responses to OEPA comments 7 and 8.

12. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1.5 Pg #: 3-7 Line #: na Code: C
Original Comment #:

Comment: Upon discovering any blockages in the transfer piping, will there be any changes in the slurry composition to keep blockages from reoccurring?

Response: Upon discovery of a blockage in the transfer piping, operations personnel will evaluate the cause of the blockage and determine the appropriate corrective action. Dependant upon the cause of the blockage, appropriate design or operational changes, which could potentially include changes in slurry composition, will be implemented to minimize the chance of future blockages.

Action: N/A

13. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.1.7 Pg #: 3-8 Line #: na Code: C
 Original Comment #:
 Comment: The design states that if the decant sump requires pumping it will be pumped back into the silos. Since the silos are the source of the water, it is not clear why the water would be pumped to the silos rather than the TTA. Decant sump water should be pumped directly to the TTA.
 Response: The design objective for level control and automatic pumping of water from the decant sump tank is to prevent overflow of the sump tank during bulk waste retrieval operations. As described, this objective is accomplished by providing pump capacity greater than the maximum expected influent flow. As recommended in OEPA's comment, the AWR Balance of Plant (BOP) design will be modified to pump Decant Sump Tank water to the TTA rather than to Silo 1 or 2.
 Action: The referenced text has been revised to specify pumping of Decant Sump Tank water to the TTA. The design details of this change will be submitted to USEPA and OEPA for review through the DCN process.
14. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.3.2 Pg #: 3-12 Line #: na Code: C
 Original Comment #:
 Comment: If leaking is discovered in a TTA tank, liquids will be transferred to another TTA tank. Will there be available area in the other remaining tanks to hold the liquid?
 Response: The capacity required for transfer of liquid from a leaking TTA tank would obviously depend upon the level in the tank where the leak occurred. The liquid above the leak would be pumped to one or more of the other three TTA tanks. Since according to the current schedule, transfer of material from the TTA to the Silos 1 and 2 Remediation Facility will begin well before silo waste retrieval is completed, sufficient capacity exists in the TTA to allow transfer of material out of a leaking tank. In addition, installation of the Slurry Receipt Tanks is included in the initial phase of Silos 1 and 2 Remediation facility construction so that the tanks are available to provide contingency capacity to support AWR sluicing operations. Prior to the start of operation of the Silos 1 and 2 Remediation Facility, the slurry receipt tanks can provide 'contingency' capacity in the event that additional capacity is required for storage of wastewater or slurry during AWR operations.
 Action: Additional detail, concerning the availability of the Silos 1 and 2 Slurry Receipt Tanks has been added to Section 1.5 of the RD Package Introduction.
15. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: Figure 3.5.4 Pg #: 3-21 Line #: na Code: C
 Original Comment #:
 Comment: The document does not adequately address the issue of off-spec material. How will off-spec material be determined? How will the material be returned for reprocessing? Please provide more detailed information.
 Response: The figure referenced in this comment is depicting the operation of the TTA Waste Retrieval System (TWRS) in transferring Silos 1 and 2 material from the TTA to the Silos 1 and 2 Remediation Facility. The 'off-spec' material identified on the diagram refers to treated Silos 1 and 2 material that fails to meet the process control parameters for acceptable treated waste. The recycle of off-spec treated Silos 1 and 2 material to the TTA has been eliminated from the Silos 1 and 2 remediation facility design.
 Action: The referenced figure has been eliminated from the RD Package. The disposition of off-spec treated Silos 1 and 2 material will be addressed in the documentation for the Silos 1 and 2 Project.

16. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.6.1 Pg #: 3-23 Line #: na Code: C

Original Comment #:

Comment: How will the site demonstrate that radon emissions do not exceed 0.5 pCi/L above background at the FEMP fence line?

Response: As described in Section 2.1 (page 6) of the Environmental Control Plan (RD Package Section 5), The RCS exhaust stack is equipped with a continuous radon monitor. Exhaust Stack radon concentration data from this monitor will be modeled to determine the resulting fenceline radon concentration and verify compliance with the annual average 0.5 pCi/l above background fenceline criterion.

As discussed in the Silos Project Environmental Monitoring Plan (RD Package Section 5.5), actual ambient concentrations measured by the fenceline and silo area radon monitors will be used to verify the modeling results. These measurements will be compared to historical baseline data to identify any trends (i.e., increased fenceline concentrations) potentially resulting from AWR operations. Data from the two background monitors at AMS 16 and AMS 12 will be used to determine background concentrations for use in determining the "annual average above-background" concentrations at the fenceline monitors in order to verify that the modeled stack data successfully demonstrate compliance with the annual average 0.5 pCi/l above background fenceline criterion.

Action: The above details have been added to Section 3.1.1 of the Silos Project Environmental Monitoring Plan. Reference has been added to the Process Description.

17. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.6.2 Pg #: 3-24 Line #: na Code: C

Original Comment #:

Comment: Provide information regarding the additional equipment that will be added to the Phase 1 equipment for conversion to the Phase 2 system.

Response: Conversion from Phase 1 to Phase 2 operation of the RCS will require 1) connection of the TTA tank headspaces to the RCS and 2) reconfiguration of the Silo connections from flexline routed over the Silo berms to hard pipe routed along the silo bridge. The Silo riser design includes piping connections to allow reconfiguration of the silo tie-ins without requiring shutdown of the RCS.

Action: N/A

18. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.6.2 Pg #: 3-24 Line #: na Code: E

Original Comment #:

Comment: Third paragraph, last sentence, change "existing" to "exiting".

Response: Comment acknowledged.

Action: Change made as recommended.

19. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.6.2 Pg #: 3-24 Line #: na Code: C
 Original Comment #:
 Comment: Stack exhaust should be minimized to just what is necessary to maintain negative pressure in the silos, TTA, and/or treatment facility.
 Response: One of the design objectives for the RCS is to minimize the stack exhaust to what is necessary during each phase to maintain negative pressure in the silos, TTA, and/or treatment facility, and provide effective operation of the RCS equipment. In addition, in order to prevent spread of contamination during waste retrieval operations, the ventilation for the slurry and sluice modules is designed to maintain airflow from areas of lower contamination to areas of higher contamination (i.e., from the outside into the modules and from the modules into the silos). In order to maintain the slight negative pressure in the Silo headspaces, TTA tanks and components the stack exhaust must compensate for in leakage into the silos, TTA tanks and components, as well as the airflow through the sluice modules into the silos. In order to assure the ability to maintain the target negative pressure, therefore, the RCS design and the corresponding emission calculations assume a 1000cfm stack exhaust during Phase 2.
- Action: The details discussed in the comment response have been added to the referenced section of the Process Description.
20. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.6.7 Pg #: 3-26 Line #: na Code: C
 Original Comment #:
 Comment: How will "used" desiccant and carbon be handled?
 Response: The desiccant and carbon will be appropriately dispositioned as part of the safe shutdown process that follows the completion of Silos 1 and 2 Remediation Facility operations. Generation of spent desiccant or carbon is not anticipated during AWR or Silos 1 and 2 Remediation Facility operations, as both components are regenerated in place as required during normal operations.
 Action: Document the planned disposition of desiccant, carbon, and waste to be generated during safe shutdown in the Safe Shutdown documentation prepared prior to the decontamination and decommissioning of the Silos 1 and 2 remediation facilities.
- 2.2- Process Control Summary:**
21. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 1.3 Pg #: 1-2 Line #: na Code: C
 Original Comment #:
 Comment: It may be prudent to have the RCS alarms directly linked to the COM center as well as the BOP Control System.
 Response: Appropriate alarms, such as those on the emission control system (see Process Control Summary page 3-16) will be linked to automatically notify selected on-site and off-site personnel.
 Action: The referenced diagram has been revised to reflect the link to the COM Center

22. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.7 Pg #: 3-10,14 Line #: na Code: C
 Original Comment #:
 Comment: The radon discharge limits are not consistent from table to table. The understanding was that the discharge limits were based on modeling to ensure that the fence line radon concentration would be less than 0.5 pCi/L above background. If the discharge limits were based on the models, the limits should be independent of which phase the project is in.
 Response: The alarm limits for the stack discharge radon monitor are calculated to assure that the workplace radon criterion of 0.2 working levels (WL) is not exceeded, as this criterion is significantly more limiting than the 0.5 pCi/l fenceline criterion. The proper high and high-high setpoints should be 5,000 pCi/l and 6,000pCi/l, respectively, for all three phases of RCS operation.
 Action: The setpoint tables have been revised to reflect the proper setpoints for all three phases of RCS operation.
23. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 3.7 Pg #: 3-13 Line #: na Code: C
 Original Comment #:
 Comment: The "High radon concentration in working area" set-point of 3 pCi/L seems low. Radon concentrations routinely exceed this concentration which would cause a continuous alarm state.
 Response: The referenced radon concentration setpoint has been revised to 30 pCi/l. This initial setpoint will be evaluated during initial RCS operations and revised as necessary.
 Action: The referenced table has been revised to reflect the new setpoint.

3 - Sampling Plan:

24. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.1.2 Pg #: 3 Line #: na Code: C
 Original Comment #:
 Comment: A reference to Section 5.5, Silos Environmental Monitoring Plan, should be added to this section; demonstrating changes to the IEMP in support of the Silos project.
 Response: Comment acknowledged.
 Action: Reference to the Silos Project Environmental Monitoring Plan, and the Integrated Environmental Monitoring Plan (IEMP) has been added as requested.
25. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: App. D Pg #: A-7 Line #: na Code: C
 Original Comment #:
 Comment: Provide a brief description of these methods as well as applicable detection limits.
 Response: Details on the procedures and their detection limits is provided in the Procedures Manual of the DOE Environmental Measurements Laboratory (EML), Document No. HASL-300. Reference to this document, as well as appropriate EPA documents providing the identified test methods, is included on the referenced table.
 Action: Titles of the referenced test methods has been added as requested.

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4 - Berm Excavation Plan:

26. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 1.0 Pg #: 1 Line #: na Code: C
 Original Comment #:
 Comment: What increase in direct radiation can be expected at the fence line due to berm removal?
 Provide an isopleth indicating the change in dose rate from the removal of the silo berm.
 Response: As described in Section 1.2 of the Berm Excavation Plan, the scope of berm removal under the current AWR design will be limited to removal of sufficient berm material to allow construction of the Silo Bridge foundations and crane access pads (see Berm excavation drawings in the Appendix to the Berm Excavation Plan). The remaining the berm soil will be left in place, to be removed as part of D&D of the Silos following completion of the AWR Project. No measurable impact to fenceline direct radiation dose is expected due to the limited berm removal to be conducted to allow bridge foundation and crane access pad installation.
 Action: N/A
27. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 2.2 Pg #: 5 Line #: na Code: C
 Original Comment #:
 Comment: Neither drawing referenced in this section is included in Section 4.
 Response: Comment acknowledged.
 Action: Drawings 94X-3900-G-01932(G6003) and 94X-3900-G-01933(G6004) have been added.
28. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 4 and 5.3 Pg #: Drawings 94X-3900-G-01936 and 35H19606-CSK-009
 Original Comment #:
 Comment: Inlet protection does not conform to *Rainwater and Land Development* requirements for inlet protection. Please see DOE-0674-00 Response to Comments on Silos 1 and 2 Accelerated Waste Retrieval Project Site Preparation Package, dated May 15, 2000, response number 28 AND DOE-0471-01 Revised Draft Remedial Design Package for the Silos 1 and 2 Accelerated Waste Retrieval Project, dated April 5, 2001, response number 26.
 Response: Comment acknowledged.
 Action: The inlet protection detail on both of the referenced drawings has been replaced with a detail consistent with page 125 of the ODNr manual.

5 - Operational Environmental Control Plan:

29. Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: 2.1 Pg #: 5 Line #: na Code: C
 Original Comment #:
 Comment: In Exhibit 2-2 it states that radon stack exhaust will be 7 pCi/L during TTA ventilation. Wouldn't the RCS be in recycle mode, which would reduce the concentration to that of the head space reduction concentration of 0.85 pCi/L?
 Response: The stack exhaust radon concentration during a TTA-ventilation-only phase of operation would be similar to the concentration resulting from Phase 1 (silo ventilation) operation. However, since the current project schedule calls for initiation of concurrent Silos 1 and 2 Remediation Facility and Silo waste retrieval operations (RCS phase 3) prior to completion of waste retrieval, there are no longer plans for an interim TTA ventilation-only operating mode.
 Action: The referenced text and table have been revised to be consistent with current operating plans.

5.3 - Stormwater Drainage Plan:

30. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 5.3 Pg #: Drawing 35H19606-CSK-006 Line #: na Code: C
 Original Comment #:
 Comment: Is the sediment basin in the southwest corner needed? Please see DOE-0674-00
 Response to Comments on Silos 1 and 2 Accelerated Waste Retrieval Project Site Preparation
 Package, dated May 15, 2000, response number 27.

Response: The Stormwater drainage design reflected in the previous AWR design included two sediment basins, one on either side of the location of the single basin included currently. In response to OEPA comments questioning the basis for and effectiveness of these basins, they were deleted from the design, as documented in the referenced comment response.

The objective of the currently designed erosion control features at Silos 1 & 2 is to keep as much sediment as possible from entering the existing perimeter trench drain located to the east and south of the silos. Once the sediment enters the existing trench drain, workers would have to physically enter the trench and manually remove the sediments that accumulate. The current location of the sediment trap, in combination with the silt fence locations will accomplish this design objective. Also erosion matting and seeding will be placed on all slopes that are 2 horizontal to 1 vertical and steeper.

Action: N/A

31. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 5.3 Pg #: Drawing 35H19606-CSK-006 Line #: na Code: C
 Original Comment #:
 Comment: Silt fences drawn at the north side of the silos cut across rather than go along contours. Silt fence must be installed per *Rainwater and Land Development*.
 Response: The drawing has been revised to reflect silt fence installed along the contour at the base of the silo berm, north of the silos. As indicated by note 3 on the drawing, however, the actual location of the silt fence may be field-adjusted as necessary to match actual field conditions.
 Action: The drawing has been revised to reflect appropriate silt fence location.

32. Commenting Organization: Ohio EPA Commentor: DSW
 Section #: 5.3 Pg #: 4 of 5 Appendix B, Calculation Number 35H19603-31B-C-003 Line #:
 Summary Table Code: C
 Original Comment #:
 Comment: The runoff coefficients given range from 0.40 to 0.55. Dave Brettschneider has said that the runoff coefficients for the site tend to be much higher than those expected from tables. Please verify these runoff coefficients with Mr. Brettshneider and his group.
 Response: The runoff coefficients reflected on the referenced table are primarily composites of the runoff coefficients developed during the original stormwater runoff design approved in the AWR Project Site Preparation Package (see drawing 66FCD001 in attachment B of the package).

The Stormwater Runoff Calculation has been reviewed with representatives of Mr. Brettschneider's group. It was agreed that, although the actual runoff may be higher than those reflected in the referenced table, 1) Minimal changes to the current runoff characteristics (e.g. paving) above those

already implemented, under the Site Preparation Package, will result from the construction activities under this RD Package; and 2) the four runoff structures addressed in the calculation currently exhibit more than adequate capacity to accommodate current and future runoff and 3) revision of the calculation to utilize new runoff calculations is not warranted.

Action: N/A

5.4 - Waste Handling Work Plan:

33.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Pg #: Line #: na

Code: C

Original Comment #:

Comment: Will there be secondary wastes associated with exhausted desiccant and carbon? How will these wastes be dispositioned?

Response: The desiccant and carbon will be appropriately dispositioned as part of the safe shutdown process that follows the completion of Silos 1 and 2 Remediation Facility operations. Generation of spent desiccant or carbon is not anticipated during AWR or Silos 1 and 2 Remediation Facility operations.

Action: Document the planned disposition of desiccant, carbon, and waste to be generated during safe shutdown in the Safe Shutdown documentation prepared prior to the decontamination and decommissioning of the Silos 1 and 2 remediation facilities.

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3. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.0 Page #: 3-1 Line #: NA
Original Specific Comment #: 3
Comment: Objective 3 of the text states that the K-65 material residue will be stored in the TTA but not for how long. The text should be revised to indicate the K-65 storage time in the TTA.
Response: The Silos 1 and 2 material will be staged in the TTA until it is transferred to the Silos 1 and 2 Remediation Facility for treatment. According to the schedule forecasts for the AWR and Silos 1 and 2 Projects, operation of the Silos 1 and 2 Remediation facility will begin while AWR retrieval operations are still in process and will last approximately one year.
Action: Objective 3 has been reworded to clarify that the material will be staged in the TTA until it is transferred to the Silos 1 and 2 remediation facility
4. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1 Page #: 3-3 Line #: NA
Original Specific Comment #: 4
Comment: The text refers to a Long Reach Manipulator Arm (LRMA) that will be used to clear debris from the pump inlet. However, in Section 1.3 of the AWR Project Remedial Design (RD) Package, Summary of Significant Changes, the text states that the "Easily Manipulated Mechanical Arm" (EMMA) has been deleted. It is not clear if a LRMA is the same device as the EMMA. The text should clarify the issue and be revised to resolve the inconsistency as needed.
Response: The Long Reach Manipulator Tool is a manually operated long reach tool that will be utilized to clear debris from the pump inlet. This tool is different from the Easily Manipulated Mechanical Arm (EMMA), which has been eliminated from the design.
Action: The referenced text has been clarified
5. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1 Page #: 3-4 Line #: NA
Original Specific Comment #: 5
Comment: The text states that "total sluicing flow is matched with the slurry pump discharge rate to achieve a steady state of slurry in the silo." However, the slurry pump is rated for 350 gpm, and the two sluicing nozzles are rated for 300 gpm each. These specifications indicate that a positive inflow into the silo of 250 gpm. The water balance in the silo should be reviewed, and the text should be revised to address this issue.
Response: The Silo Waste Retrieval System (SWRS) design does incorporate two 300 GPM sluicing nozzles to provide maximum ability to direct the sluice water as required to most effectively mobilize the Silos material. The two nozzles will be operated, however, with a maximum total discharge flow of 300 gpm, thus ensuring at least 50 gpm net 'removal' capacity.
Action: The referenced text has been revised to clarify the maximum total sluice water flow.

6. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 3.1 Page #: 3-4 Line #: NA
 Original Specific Comment #: 6
 Comment: The text states that a high-pressure spray ring at the slurry pump will be used to break up hard material. The text does not provide information on the flow rate for this system or its duration of operation. This system would add liquid to the silo at an unknown rate and would therefore increase the silo liquid level. The text should be revised to explain how the spray ring system would work and how the liquid level in the silo would be controlled if the rate of water inflow into the silo exceeds the slurry pumping rate out of the silo.
 Response: The enclosed Silo Project Mass Balance Table identified that the flow to the slurry pump spray ring is 40 gpm and assumes that the spray ring is operated approximately 33 minutes per day. The operation of the slurry pump spray ring will be evaluated as part of the AWR Cold Loop Testing at TPG Applied Technology. The water pumped through the spray ring into the silo will be monitored by the Bulk Slurry Control System to determine if the water inflow into the silos is impacting the water balance.
 Action: N/A
7. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 3.1.1 Page #: 3-4 Line #: NA
 Original Specific Comment #: 7
 Comment: The text states that the silo sluicer nozzles are 0.75 inch in diameter and operate at 200 pounds per square inch (psi) and 300 gpm. The text also states that the sluicer stream velocity will be approximately 140 feet per second (ft/s) and that "sluicing flow rate will be fixed whether operating one or two nozzles." However, a 0.75-inch diameter nozzle operating at 300 gpm would produce a stream with a discharge velocity of nearly 220 ft/s. The text should be reviewed and revised to clearly explain how the sluicer stream nozzle system would will work and how stream velocity would be controlled.
 Response: A key parameter being evaluated in the AWR Cold Loop Testing at TPG Applied Technology, is the optimization of the silo sluicer nozzles and configuration. The design basis is 300gpm stream at the nozzle. The actual nozzle dimensions and flows that are optimized will be incorporated in the AWR Balance of Plant Final Design Package. The stream velocity will only be controlled by the flow from the supernatant pumping function because the pressure will be a function of the pump and the line losses because the nozzle orifice will be fixed.
 Action: N/A
8. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 3.1.3 Page #: 3-5 Line #: NA
 Original Specific Comment #: 8
 Comment: The text states that the slurry pump is supported from the cable-and-winch system but does not explain what prevents the slurry pump from spinning when it is energized. The text should be revised to address this issue.
 Response: The slurry pump (centrifugal pump) selected for the AWR Cold Loop Testing and planned for use on the AWR bulk waste retrieval activities is designed to be supported by a cable and winch system. During the testing of this pump in the AWR Cold Loop Testing the pump was supported by a cable and winch system and the concerns expressed on the pump spinning due to torque have not been experienced.
 Action: N/A

9. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1.5 Page #: 3-7 Line #: NA
Original Specific Comment #: 9
Comment: The text states that pressure gauges will be installed along the slurry transfer piping to locate potential pipeline blockages and that clean-out areas will be installed at approximately 80-foot intervals. It is not clear how these pressure gauges and clean-out areas will be installed without compromising the integrity of the "pipe-in-pipe" system. The text should be revised to address this issue. Additionally, if clean-out areas can be installed without compromising the integrity of "pipe-in-pipe" system, high pressure flushing connections should be considered at each clean-out area to flush out the blocked section of pipeline without physical pipe intrusion using a "snake."
Response: Based on ALARA and contamination control issues the design is planning to utilize 200 psi water to flush out the plugged lines. By using water to flush the plugged lines it maintains the integrity of the pipe in a pipe system (secondary containment) The pressure gages and the flush line fitting would not impact the pipe in a pipe system because the flush line fittings and the pressure gages will be sealed to prevent leaking.
Action: The referenced text has been revised.
10. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1.5 Page #: 3-7 Line #: NA
Original Specific Comment #: 10
Comment: The text states that the slurry pump will be equipped with an inlet screen plate to minimize the size of debris in order to reduce clogging of the slurry pipeline. Sometimes the pump's inlet velocity will not be high enough to prevent clogging of the screen. It may be better not to use an inlet screen plate but to use an inlet deflector plate instead to prevent large chunks from being sucked into the pump intake. The deflector plate acts as a sump bottom and moves up or down with the pump to maintain proper distance between the pump inlet and the movable plate. If a deflector plate is not used, the design should be reviewed to ensure that the slurry pipeline is large enough to pass the largest debris particles expected to pass through the pump. The slurry pump design should be reviewed and revised as needed to address these issues.
Response: The current slurry pump design was based on recommendations from the slurry pump manufacturer based on the material of services. The issues raised by this comment were discussed with the slurry pump manufacturer. The AWR Cold Loop Testing will verify that the use of an inlet screen plate is needed and effective.

Action: N/A

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14. Commenting Organization: U.S. EPA
Section #: 3.3.2 Page #: 3-11
Original Specific Comment #: 14

Comment: The text states that provisions are made to allow transfer of contents of a leaking tank to the remaining three. However, according to the first paragraph of Section 3.3.1, the maximum storage level in each tank is 90 percent of total capacity, or 675,000 gallons. If all four tanks are full and one is leaking, the available storage capacity in the three nonleaking tanks would be 225,000 gallons, which would leave 400,000 gallons in the leaking tank. The text should be revised to explain where the remaining contents of the leaking tank would be stored.

Response: The situation described in this comment would exist only if 1) a leak occurred at the very bottom of a TTA tank, thus requiring the entire contents to be transferred; and 2) the leak occurred while all four tanks were completely filled. In addition, available tank capacity at the Silos 1 and 2 Remediation Facility, could be used for receipt of material from a leaking tank in addition to the other TTA tanks. According to current project schedules, there is considerable overlap between the initiation of Silos 1 and 2 remediation facility operations and SWRS operations. Therefore, more than adequate capacity should exist in the TTA for transfer of liquid from a leaking tank.

Action: N/A

15. Commenting Organization: U.S. EPA
Section #: 3.4 Page #: 3-16
Original Specific Comment #: 15

Comment: The text states that the slurry/decant pump will be operated as a slurry transfer system during TTA waste retrieval system (TWRS) activities. The text also states that variable-speed pump controls will be used to adjust the discharge of the pump to 350 gpm at 150 psi. However, Section 3.3.10, Page 3-14, states that the slurry/decant pump normally delivers 300 gpm to sluicing nozzles at 200 psi. It may be difficult to find an open impeller submersible pump that can develop such a high discharge pressure. The design should be reviewed and revised as needed to address this issue.

Response: During the TWRS activities the slurry/decant pump will be utilized to transfer slurry/sludge from the TTA tanks to the Silo 1&2 treatment facility. The plan is to operate the pump in this operation at 350 gpm of slurry/sludge transferred at 150 psi. The reference to Section 3.3.10 Page 3-14 states that the slurry/decant pump will normally deliver 300 gpm to the sluicing nozzles at 200psi of sluice water. These design criteria were established into the slurry pump performance requirements prior to pump selection and the Hazelton pump selected meets these requirements. These performance requirements are being evaluated during the AWR Cold Loop Testing at TPG Applied Technology.

Action: N/A

16. Commenting Organization: U.S. EPA
Section #: 3.6.1 Page #: 3-23
Original Specific Comment #: 16

Comment: The first bullet states that the RCS is designed to prevent over-or-under-pressurization of the silos and transfer tanks beyond +0.5 and -2.0 inches of WC. It may be difficult to achieve WC range because of fluctuating liquid levels in the various tanks and silos and expansion and contraction of gases and water vapor inside the tanks and silos caused by changing seasonal and daily temperature fluctuations. The design should be reviewed accordingly and revised as needed to address this issue.

Response: The issues raised in this comment were considered during the RCS design. The design includes several damper and pressure controls to meet the silo and TTA tank pressure requirements. The voluminous space of the silo headspace and the TTA tanks is counted on to dampen the effects of the various variables that will impact the pressure in the silos and tanks. RCS Phase I testing in a relatively closed system will provide valuable information on the ability to control silo pressurization and allows for enhancements to be implemented prior to the waste retrieval activities when several additional variables will be introduced into the RCS silo and tank pressure balancing operation.

Action: N/A

SPECIFIC COMMENTS ON PROCESS CONTROL SUMMARY FOR THE AWR PROJECT

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| 17. | Commenting Organization: U.S. EPA
Section #: 2.2.1 Pages #: 2-1 and 2-2
Original Specific Comment #: 1 | Commentor: Jablonowski
Line #: NA |
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Comment: According to Section 2.2.2 on Page 2-3, a slurry/decant pump located inside the transfer storage tank will supply water to the sluicing nozzles at a rate of 300 gpm at 200 psi. A centrifugal, open-impeller pump may not be able to develop the 200 psi of pressure required for the sluicing nozzle. A booster pump may be required to achieve the required pressure for the sluicer. The text should be revised to clearly describe the operation of the sluicing nozzle system, and the design should be revised as needed to consider the use of a high-head, open-impeller submersible pump.

Response: During the TWRS activities the slurry/decant pump will be utilized to transfer slurry/sludge from the TTA tanks to the Silo 1&2 treatment facility. The plan is to operate the pump in this operation at 350 gpm of slurry/sludge transferred at 150 psi. The slurry/decant pump will normally deliver 300 gpm to the sluicing nozzles at 200psi of sluice water. These design criteria were established into the slurry pump performance requirements prior to pump selection and the Hazelton pump selected meets these requirements. These performance requirements will be evaluated during the AWR Cold Loop Testing at TPG Applied Technology.

Action: If the AWR Cold Loop Testing at TPG Applied Technology does not meet these design criteria the AWR Final Design will evaluate the need for incorporation of a booster pump in the sludge line.

Comment: The text states that sluicing water flow can be directed to a single nozzle or split between two nozzles in the same silo. Table 2-2 on page 2-6 indicates that a low-flow alarm will sound when the flow rate at a nozzle drops below 200 gpm. Because sluicing water supply pump can only deliver 300 gpm at 200 psi, the low-flow alarm will always sound when two sluicing nozzles are operated at the same time. The design should be revised to address this issue.

Response: Agreed

Action: The table will be revised to reflect the proper conditions for concurrent operation of two sluicing nozzles.

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| 19. | Commenting Organization: U.S. EPA
Section #: 2.2.4 Page #: 2-6 and 2-7
Original Specific Comment #: 3 | Commentor: Jablonowski
Line #: NA |
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Comment: The text states that during silo waste retrieval system (SWRS) operation, the slurry transfer pump will be programmed to deliver a flow of 350 gpm. However, according to Section 2.2.2, the same pump is to provide sluicing water at a rate of 300 gpm and at 200 psi. Table 2-3 states that a high-pressure alarm will be initiated when the discharge pressure reaches 225 psi.

Typically, open-impeller pumps cannot develop the high discharge pressures required by the design. The design should be reviewed and revised as needed to use a non-open-impeller pump.

Response: During the TWRs activities the slurry/decant pump will be utilized to transfer slurry/sludge from the TTA tanks to the Silo 1&2 treatment facility. The plan is to operate the pump in this operation at 350 gpm of slurry/sludge transferred at 150 psi. The reference to Section 3.3.10 Page 3-14 states that the slurry/decant pump will normally deliver 300 gpm to the sluicing nozzles at 200 psi of sluice water. These design criteria were established into the slurry pump performance requirements prior to pump selection and the Hazelton pump selected meets these requirements. These performance requirements are being evaluated during the AWR Cold Loop Testing at TPG Applied Technology.

Action: Based on the performance data from the AWR Cold Loop Testing, the alarm set points will be revised if necessary.

20. Commenting Organization: U.S. EPA
Section #: 2.2.5 Page #: 2-9
Original Specific Comment #: 4
- Commentor: Jablonowski
Line #: NA

Comment: The text discusses the decant sump pump. However, the discharge capacity of this pump is not provided. Also, this pump is to discharge into the silos but it is not clear if the pump discharges into one silo at a time or both simultaneously. Finally, this additional flow must be accounted for in the water balance. The slurry pump has a finite capacity and may not be able to handle this additional flow. The text should be revised to explain how this additional flow would affect slurry pumping operations and the overall silo liquid level.

Response: As described in Section 3.2 of the process Description (RD Package 2.1), the maximum capacity of the sump pump is 40gpm. Since the maximum capacity of the slurry pumps is 350 gpm, and the maximum total sluice water rate rate is 300 gpm, sufficient capacity exists to handle potential flow from the decant sump pump.

Action: N/A

21. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: Table 2-5 Page #: 2-13 Line #: NA
Original Specific Comment #: 5
Comment: According to Table 2-5, low-pressure conditions as identified by the low-pressure alarm may indicate or result in a plug in the pipeline. Typically, a plugged pipeline would create high discharge pressure and not low discharge pressure. The text should be revised as needed. Also, a high-pressure alarm should be provided for this pump.
Response: Agreed
Action: The table will be revised as recommended.

22. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1.1 Page #: 3-1 Line #: NA
Original Specific Comment #: 6
Comment: The text states that the RCS control system is designed to maintain silo pressure between -2 and +0.1 inch of WC. The Process Description Document, Section 3.6.1, Page 3-23, states that the RCS is designed to prevent over-or-under-pressurization of the silos and transfer tanks beyond +0.5 and -2.0 inch of WC. It is not clear which limits will be used to control pressure in the tank headspace. The document should be revised as required to address this issue. It should also be noted that maintaining any of the pressure ranges stated above could be very difficult using constant-speed fans. Variable speed fans and a pressure control system may help maintain the headspace pressure within the acceptable range.
Response: The maximum allowable pressure range is -2 to +0.5 inches WC. The RCS pressure control system utilizes a 'target operating range' of -2 to +0.1 inches WC so that response actions (damper operation, etc) are initiated in time to avoid exceeding the maximum range. The ability of the RCS design to maintain pressure within the maximum range is discussed in the response to USEPA comment 16.
Action: The referenced text has been revised to clarify the maximum and target operating pressure ranges.

23. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1.1 Page #: 3-3 Line #: NA
Original Specific Comment #: 7
Comment: The text states that the RCS will automatically shut down if the pressure inside the silo exceeds 0.2 inch of WC. It is not clear why the system will shut down. Pressure inside the silo could continue to rise from sluicing water being pumped into the silo. High outside temperature and heat can cause gases and vapors inside the silo to expand, thereby raising headspace pressure. The RCS should always be operational and only limit the inflow to that silo to bring pressure to acceptable levels. The use of relief valves to control headspace pressure should be avoided. Relief valves should only be used during unforeseen conditions and not as means of controlling headspace pressure. The design should be reviewed and revised accordingly to address these issues.
Response: As described in the referenced section, the initial response to positive pressure is to begin closing the Silo supply damper, as recommended in this comment. If positive pressure remains after the supply damper is completely closed, then the exhaust dampers, followed by the bypass dampers, will open to increase flow the silo to the RCS. As describes in the referenced section, automatic shutdown of the RCS fans would occur only if pressure above +0.2 inches

Response: The RCS instrumentation does provide the capability for real-time measurement of the radon concentration at outlet of the individual carbon beds to evaluate the performance of an individual bed. The elevated radon concentrations in the discharge stack will trigger corrective actions, which can include evaluation of the individual beds to determine which, if any is exhibiting degraded performance.

Action: N/A

27. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 3.6 Page #: 3-15 Line #: NA
 Original Specific Comment #: 11
 Comment: The text states that pressure drop will be measured across the high-efficiency particulate air (HEPA) filters upstream of the discharge stack. Tables 3-2 and 3-3 do not list alarm set points for HEPA filter pressure drop and should be revised to include this information. This information should also be added to Table 3-1 if the discharge stack will be used during Phase 1 of the AWR project.
 Response: Agreed.
 Action: HEPA filter pressure drop setpoints have been added to the tables.

SPECIFIC COMMENTS ON THE SAMPLING PLAN

28. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: NA Page #: NA Line #: NA
 Original Specific Comment #: 1
 Comment: While the AWR Project sampling Plan addresses the collection and analysis of wastewater and air emission samples, it does not address the collection of Silo 1 and 2 material samples that would be expected for waste characterization to support treatment for meeting transportation and disposal requirements. This is of particular concern since a goal of treatment should be the production of containers of treated Silo 1 and 2 material, meeting transportation requirements as well as the waste acceptance criteria (WAC) of the receiving disposal facility, without the possibility of creating rejects that would require rework. Somewhere in the AWR RD package, the integration of the AWR and Silos 1 and 2 treatment projects, whether the treatment project will have adequate material information to support treatment, should be addressed. Adequate waste characterization to support the production of treated Silo 1 and 2 material meeting transportation and disposal requirements should be addressed in this sampling plan.

Response: Considerable testing has been conducted, using both actual and surrogate Silos 1 and 2 material, to optimize the process and treatment formula for treatment of the Silos 1 and 2 material. Based upon the results of this testing a robust treatment formulation and optimum process control parameters are being incorporated into the final design of the Silos 1 and 2 remediation facility. Sufficient treatability testing and characterization data exists to ensure that the Silos 1 and 2 treatment process will successfully produce treated waste that meets all WAC and transportation requirements. The design of the Silo 1 and 2 Remediation facility will provide the capability to obtain samples from the slurry receipt tanks to allow verification and/or adjustment of the stabilization recipe for an individual feed batch. In addition, since the final design and majority of the construction for the Silos 1 and 2 Remediation Facility will be

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complete prior to initiating AWR waste retrieval operations, there is no benefit to incorporating additional Silos 1 and 2 sampling into the design of the AWR Project.

Action: N/A

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| 29. | Commenting Organization: U.S. EPA
Section #: 2.1.2 Page #: 3
Original Specific Comment #: 2 | Commentor: Jablonowski
Line #: NA |
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Comment: The text refers to upstream and downstream monitors but does not indicate which component of the RCS is being discussed. The text should be revised to clarify whether the text refers to the carbon beds, HEPA filters, or another RCS component.

Response: The text refers to radon monitors upstream and downstream of the carbon beds.

Action: The referenced text has been revised to clarify which monitors are being referred to.

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| 30. | Commenting Organization: U.S. EPA
Section #: 3.2.2. Page #: 7
Original Specific Comment #: 3 | Commentor: Jablonowski
Line #: NA |
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Comment: The discussion of radon monitoring downstream of the four carbon beds is not clear. The text should be revised to clearly describe the monitoring locations and indicate whether the system will be capable of monitoring radon discharge from each individual carbon bed. In addition, subsequent description of radon process monitoring in Section 4.2.2 suggests that two monitoring locations will be downstream of the carbon beds. However, if the system is not set up to measure the radon discharge from each carbon bed, it will be difficult to determine whether breakthrough is occurring at a particular carbon bed. The text should be revised to address this issue.

Response: The RCS instrumentation does provide the capability to measure the radon concentration at outlet of the individual carbon beds to evaluate the performance of an individual bed. The elevated radon concentrations in the discharge stack will trigger corrective actions, which can include evaluation of the individual beds to determine which, if any is exhibiting degraded performance.

Action: N/A

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| 31. | Commenting Organization: U.S. EPA
Section #: 4.1 Page #: 7
Original Specific Comment #: 4 | Commentor: Jablonowski
Line #: NA |
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Comment: The text states that field screening is performed to determine the likelihood of wastewater samples in meeting the radionuclide criteria and that samples not meeting these criteria will be sent to the laboratory for confirmatory analysis. Further, the text indicates that the laboratory will first determine if the radionuclide criteria are met and then conduct metals and general chemistry analyses only if the radionuclide criteria are met. Appendix B summarizes holding time requirements for wastewater samples. The appendix states that the nitrate sample holding time is 24 hours. The text should be revised to present a detailed procedure or protocol to ensure that the nitrate sample holding time will be met despite the radionuclide criteria evaluation.

Response: Nitrate analysis is not required for acceptance at the AWWT.

Action: Reference to the nitrate analysis has been deleted from Appendix B.

32. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 4.1 Page #: 7 Line #: NA
 Original Specific Comment #: 5

Comment: The text states that representative samples from each batch of RCS condensate wastewater and filtrate wastewater are needed. However, the text does not provide a detailed protocol or description of minimum requirements before and after sampling. Specifically, during and after wastewater sampling, no wastewater should be allowed to enter the tank being sampled and no wastewater should be allowed to discharge until analytical results are available. Once analytical results demonstrate that the contents in the sampled tank meet the discharge criteria, the tank contents can be transferred to the AWWT facility. The text should be revised to address this issue.

Response: The RCS design includes two condensate tanks. When one of these tanks is filled, the input flow will be switched to the other tank, and the full tank will be sampled as described. Upon confirmation that the analytical results on the filled tank meet AWWT criteria, it will be transferred to the AWWT.

The filtrate tank was associated with the ultrafiltration system in the previous AWR design. As described in the Process Description section 2.6, the ultrafiltration system has been eliminated from the AWR design.

Action: The referenced text has been revised to clarify these details.

33. Commenting Organization: U.S. EPA Commentor: Jablonowski
 Section #: 4.1.1 Page #: 8 Line #: NA
 Original Specific Comment #: 6

Comment: The text states that samples likely to meet Advanced Wastewater Treatment (AWWT) criteria will be submitted to the laboratory for more definitive confirmatory analysis. The text should be revised to provide a protocol to follow for samples that do not meet the AWWT acceptance criteria. Specifically, the text should specify the disposition of waste whose sampling results do not meet the AWWT acceptance criteria. The sampling plan should be revised to discuss the management of wastes whose sampling results do not meet acceptance criteria.

Response: Given the expected characteristics of from the AWR operations and the discharge criteria for the AWWT, no wastewater unacceptable for transfer to the AWWT is expected to be generated. If analytical results for a particular batch of wastewater are found to be unacceptable, the batch will be managed on a case-by-case basis at the direction of AWWT operations. The specific disposition of the wastewater could include pretreatment, or transfer to storage (at the AWWT or elsewhere) and would be dependant upon factors including the amount, and specific characteristics of the batch of wastewater and upon current and planned AWWT operations at the time the AWR wastewater is generated.

Action: Additional detail concerning the disposition of wastewater not acceptable for transfer to the AWWT has been added to the Section 2.3 of the Environmental Control Plan (RD Package 5.0) . Reference to the Environmental Control Plan has been added to the Sampling Plan.

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| <p>37. Commenting Organization: U.S. EPA
 Sampling Plan Appendix C Page #: A-6
 Original Specific Comment #: 10</p> | <p>Commentor: Jablonowski
 Line #: NA</p> |
| <p>Comment: The text does not present detailed information regarding the disposal of polyethylene sheeting. If no accidental spills occur during wastewater purging and sampling, the polyethylene sheeting could be deemed appropriate for disposal. However, if a spill occurs and the polyethylene sheeting is contaminated with wastewater, protocols implemented should be described. The text should be revised to include more details regarding this issue.</p> | |
| <p>Response: The polyethylene sheeting will be characterized and disposed in accordance with FEMP waste management procedures.</p> | |
| <p>Action: The text has been revised to reference characterization and disposal in accordance with FEMP waste management procedures</p> | |

SPECIFIC COMMENTS ON OPERATIONAL ENVIRONMENTAL CONTROL PLAN

38. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 2.1 Page #: 5 Line #: NA
Original Specific Comment #: 1
Comment: Exhibit 2-2 presents the results of performance calculations for the RCS. The calculations project that the radon concentration in the discharge stack will be 8,000 pCi/L during Phase 2 of the AWR project. However, Section 4.2.1 of the sampling plan suggests that the projected ambient air impact of radon discharges from the RCS is based on a stack concentration of 6,000 pCi/L. If the discharge stack concentration will be higher (8,000 pCi/L), the text should be revised as needed to reflect the higher stack concentration.
Response: As stated in the response to USEPA Comment No. 34, the text in Section 4.2.1 of the sampling plan has been revised to reference the correct setpoints for each phase of RCS Phase 1 operation, which are documented in the Process Control Narrative
Action: N/A

SPECIFIC COMMENTS ON RCS PERFORMANCE

39. Commenting Organization: U.S. EPA
Section #: NA Page #: 29 Commentor: Jablonowski
Line #: NA
Original Specific Comment #: 1
Comment: The text indicates that the stack emissions during Phase 2 operations would result in instantaneous on-site radon exposures that are fully 77 percent of the allowed maximum level. The assumptions that led to these numbers include full design airflow, proper functioning of the conditioning system, and the use of all four carbon beds. There is an inadequate margin of safety in the case of the temporary loss of one carbon bed during a carbon change or for another reason. The loss of a carbon bed would significantly decrease the adsorption efficiency of the remaining beds handling the increased air flow. In addition, there may be an inadequate margin for irregularities in the function of the conditioning system that would decrease adsorption efficiency. However, prompt corrective actions would prevent exceedances of the on-site average and off-site limits, since these have much greater margins of safety. The adequacy of design treatment capacity should be revisited and modifications made to design procedures as necessary to handle the unplanned excursions from nominal that are routine in and around the K-65 silos.

SPECIFIC COMMENTS ON SILOS PROJECT ENVIRONMENTAL MONITORING PLAN

42. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.1.3 Page #: 4 Line #: NA
Original Specific Comment #: 1
Comment: The text indicates that the entire Integrated Environmental Management Plan (IEMP) radon monitoring network is shown on the figure included as Attachment B. However, the figure does not show two of the new radon monitoring locations (KNO and KSO), and three new locations appear to be shown but are not labeled (LP2, T1117, and PR-1). Attachment B should be updated to show and label all radon monitoring locations.
Response: Comment acknowledged. The referenced new locations were added to the detailed Silos area drawing (Attachment A), but not to Attachment B.
Action: Attachment B has been updated.
43. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 3.2 Page #: 5 Line #: NA
Original Specific Comment #: 2
Comment: The text states that additional direct radiation monitoring locations will be needed as a result of the AWR project but does not identify any specific locations as was done for new radon and air particulate monitoring locations. The text should identify the new locations and provide this information to EPA before Phase 1 of the AWR project begins.
Response: Five new direct radiation monitoring locations will be added to the Silos area before initiation of RCS Phase I.
Action: The text and figures within the plan have been revised to specifically identify the new locations.
44. Commenting Organization: U.S. EPA Commentor: Jablonowski
Section #: 4.0 Page #: 6 Line #: NA
Original Specific Comment #: 3
Comment: The text states that results for the new radon and air particulate monitoring locations will be included in IEMP quarterly status reports. The text should be revised to indicate that direct radiation results from new monitoring locations will also be reported in IEMP quarterly status reports.
Response: Direct radiation monitoring data from the TLD locations discussed in Section 3.2 of the plan will be reported in the IEMP mid-year data summary, and the Site Environmental Report (SER)
Action: The referenced text has been revised to reflect reporting of the Direct radiation monitoring data.

SILOS PROJECT USEPA / OEPA STATUS BRIEFING

September 9, 2002

10:30 – 12:00	Field walk-down of OSDF and Silos area	J.D. Chiou (OSDF) / Bruce Schweitzer (Silos area)
12:00	Lunch	
1:00 – 4:00	Silos Project Briefing (DOE EM Conference Room)	
	<ul style="list-style-type: none">• Silo 3 RD Package<ul style="list-style-type: none">- OEPA/USEPA Comments- Info Package on Sheet Piling	Doris Edwards / Mike Griffin
	<ul style="list-style-type: none">• Silo 3 Proposed Plan	Steve Beckman
	<ul style="list-style-type: none">• Silo 3 Technical Roundtable Preview	Nina Akgunduz / Terry Hagen
	<ul style="list-style-type: none">• Silos Projects Schedule update	Nina Akgunduz / Ray Corradi
	<ul style="list-style-type: none">• Regulatory Deliverables Submittal/Review Schedule	Steve Beckman